WHERE JAPS ARE MARCHING.

CHARACTERISTICS OF THE NORTHERN PROVINCES OF CHINA.

TRAVELLING METHODS—CELESTIAL INNS—HUNTERS AND FISHERS—A STRONG, RUDE RACE—RELIGIONS—NEWCHANG.

The provinces of Northeastern China, into which the Japanese are about to march, form one of the most interesting parts of the Celestial Empire. The great provinces of Kirin, Liao-Tung, Sheng-Ting and Chih-le are less densely populated than the other provinces, and are seldom visited by the traveller or even the missionary. There is one treaty port at Newchang, which has been aptly described as a marsh sliding out into the sea. With this exception hardly a European lives in the two provinces first named, or in the northeast portion of the third. It is a land famous in Chinese history. Across it have marched armies from time immemorial—Coreans and Japanese, Siberians and Tartars, Mongols and Manchus, Chinese and Sushun. It was much more populous in the old days than at present. The climate was milder, the soil more fertile. At one time it was a series of powerful principalities which dominated Eastern Asia, and from the Sushun came the Moguls, the Mongols and Manchus, who conquered nearly all of Asia and two-thirds of Europe. Even as late as the fifth century after Christ the nations in this district were known by the heroic title "the fighting kingdoms." It would seem as if the bellicose spirit had cured itself in the most natural manner by killing off nearly all the men capable of bearing arms, for in the last three hundred years the land has been so sparsely populated that the Imperial Migration Bureau of the Chinese Government has sent forward tens of thousands of families from other provinces to repeople the uninhabited lands. In the last century over two hundred thousand persons went under these auspices from Chih-le, Shang-Tung and Shansi into Liao-Tung and Kirin. Travelling in these localities has its advantages and disadvantages. The roads are extremely bad. In many cases they are paths through forests and shelves cut in the sides of precipitous mountains. The inns are dirty and infested with vermin, and the means of locomotion are of the most primitive character. The beasts of burden are the China pony, the donkey, buffalo, ox, camel and the human being.

You can walk if you want to, but the roadway is so rough as to wear out both shoes and patience in no time. You can ride and be quite comfortable. The horses, jackasses and camels, from long experience, are extremely skilful, both in mountain climbing and in threading their way through seemingly impassable marshes. Or you can follow in the footsteps of the Chinese gentleman of leisure and go in a horse-litter. This is a roomy chair or box, suspended between two long poles of bamboo or strong wood, the ends of which serve as shafts for two quadrupeds. The pony and donkey take kindly to this kind of work, and will travel forty miles a day without much trouble.

Or if you are in love with the antique customs of John Chinaman you can make your voyage in a ponderous sedan-chair, hung from the shoulders of four patient and long-suffering coolies. This is the way the Mandarins travel in this part of the empire. Their chair is so large that, if needs be, they can use it as a bed. The interior of the chair is fitted up like a small-sized storeroom, and usually contains a lamp, candles, pistols, dried meats, dried fish, extra clothing, a change of boots, fuel, cooking utensils, a large tea-caddy full of hot tea, and any amount of small groceries. It makes a very heavy load for the unhappy chair porters, but it enables the traveller to be comparatively comfortable in the wildest districts of the northern forests.

The inns and houses are like those of Central China, but more strongly built. They have to be wind and weather tight on account of the fierce cold of the Mongolian winters. A feature of the domestic economy is extremely amusing. Instead of stoves they have a brick bench in the main room of a building, which does double duty in cooking and in keeping the inhabitants warm; the fire is built at one end and the flame and smoke run the whole length of the bench before they escape into the chimney or through a hole in the roof. On this bench in the winter nights sleep the family and all the guests. The place of honor is nearest the fire. When the nights are extremely cold a sleeping bag is called into use. This is a huge affair, five feet wide and seven feet long, made of goat's skin, sheepskin or other hide, with "the woolly side in." The head of the house, his wife and all his children, slide into this great bag, pull the edge of it over their heads and disappear in the arms of Morpheus. An ordinary house has two or three bags for the family, the servants and any friends or relatives who may spend the night, while the inns will have often as many as a dozen. This comes a little rough upon Anglo-Saxons.

In addition to all ordinary forms of vermin, this part of the Chinese Empire, like Corea, rejoices in the largest cimex lectularius known to bug-hunters. The largest insect which patronizes cheap Bowery lodging-houses is never larger than a quarter of an inch in diameter, but these in the far East attain a size sometimes an inch in diameter. They are frightfully predatory, and can, it is said, draw half an ounce of blood in a single attack. They possess all the other repulsive characteristics of the insect, and impart an odor to a house that is nauseating to European and American nostrils.

The fare in these inns is much better than in Central and Southern China. While the people are Buddhists, they nevertheless subordinate the vegetarian ideas of that religion to the meat-eating necessity of their climate. People in South China have a diet that is about five-sixths vegetable and one-sixth animal. In the north the proportions are just about half and half. They have great variety in their food supply, mountains and forest abounding in game of every type, and rivers and lakes being full of fish.

They eat fox-meat and wolf-meat, and do not mind a small dog once in a while. They draw the line, however, at all members of the cat family, from the cave-tiger of the north down to harmless puss and tabby. They explain this by the statement that the meat of all the members of the dog family is very palatable and wholesome, while that of the cat family is rank, musty and productive of stomach disorder. While they have a good supply of vegetables, they do not seem to utilize them much, but confine themselves to rice, millet, beans and a few other cereals and esculents.

The country people are very skilful hunters and fishers. Many of them employ the old Manchurian bow, which is a powerful weapon, very much like the long bow of the English in the thirteenth century. They also use a still more formidable weapon which they call the tiger-bow. This is set in the woods or in places frequented by wild animals. It takes its name from being employed to kill the Siberian tiger, that occasionally comes down into this part of the country. It has a pull of about 250 pounds, and will send an arrow through the body of either a tiger or a bear. The vitality of these animals is so great, however, that, even with a single arrow through them, they have been known to live and do damage for twenty-four hours afterward. To prevent this and to make the result doubly certain, the tiger-bows are set in series of three and four, so that the doomed animal generally receives most of the shafts in his body. Besides the meat supply afforded by game, there is a great demand for skins and furs from all parts of the Empire. In the north of China fur coats are almost a necessity. In the south, although the winters are warm and light clothing can be worn the entire year through, fur-trimmed garments are always fashionable. The fashion probably is a survival of the past, the southern Chinese having originally come from the lands which we now sum up under the general term of Mongolia.

To supply this demand, very large numbers of people find a livelihood in hunting and trapping. Among the animals which they take for this purpose are the otter, ermine, fox, marten, squirrel, wolf, bear, tiger-cat, sable, wild goat and panther. They also produce some furs which bring enormous prices in Pekin and the other great cities, but which are unknown to civilized life excepting in the case of the so-called Astrakhan furs—and that is the skins of unborn animals. The squirrel, tiger, blue fox and tiger-cat are the favorites in this regard. The prices brought for these goods are sometimes fabulous. A mandarin's robe of unborn squirrel brings from $5,000 upward, while one of unborn tiger cub is worth almost as much.

The people are skilful fishermen and never exhaust a pool or stream. In addition to this they stock their own ponds with the favorite fish of the local markets and derive a fair income from them.

The great market for furs is the treaty port of Newchang, on the Gulf of Liao-tung. The city of Moukden, upon which the Japanese are now advancing, is another famous fur market. Ordinary furs are extremely cheap in this country. An overcoat of brown squirrel can be bought for $6; one of long-haired kid for $4, and of long-haired goat for $1 50. There is also a considerable trade done in camel-skin and camel's-hair. This patient brute in Northern China is even a more powerful animal than his cousin of the Sahara, but, instead of being smooth, he is very shaggy the year through, and in winter has a coat almost as heavy as a buffalo robe.

Another feature of the people is that they are nearer the typical Manchurian than the Chinese. They are taller and handsomer than the latter, have higher cheek-bones, more oval faces and larger eyes. Some of the women are remarkably beautiful, even when measured by European and American standards. They have more liberty than their sisters in other parts of the realm, and a much smaller percentage are compelled to suffer the awful agony of foot-binding.

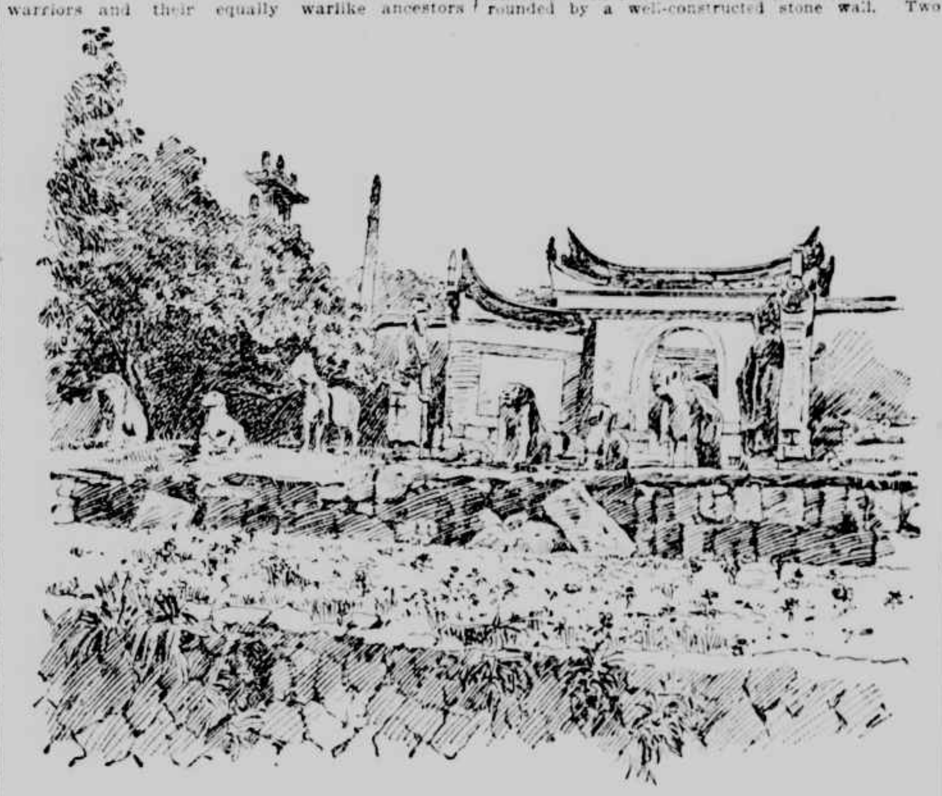
Polygamy and concubinage prevail here as in nearly all parts of the Far East. The social evil, however, is very slight, and in many towns and cities is entirely unknown. The people are not polite nor hospitable, but they are much more honest and truthful than their neighbors of the south. They are religious and superstitious, and have temples and monasteries in great abundance. Most of them are Buddhists of the Taoist variety. They are strong believers in the Taoist hell, which can easily discount the description of that place in Dante's Inferno. Some of the punishments as described by the priests in the north are marvellously sanguinary. In one a wicked man who is torn to pieces and eaten up by a hungry tiger comes together and reunites during the night, so as to present a fresh meal to the carnivorous beast the next morning. Another punishment consists in being sawed lengthwise by two devils with a red-hot saw. The planks made in the operation are laid carefully aside, and kept alive by a special miracle. During the night they unite so perfectly that the man is ready to be sawed into planks again the next day. Christianity has made little or no progress with these queer children of the north. The only alien faith which has been successful in missionary work is that of Mahomet, which has a few converts in nearly every town and district. In all probability this part of China will be brought into prominence by the Japanese occupation of Newchang, the city mentioned. It is the great port and is situated on the River Liao, about twelve miles from the Gulf of Liao-Tung. It was practically unknown until the '60s, when it was opened to commerce and made the settlement of a few Europeans and Americans. It is very difficult of access, the river being shallow, the channel extremely irregular and the banks for many miles being a series of mud flats and quicksands.

MOUKDEN AND NEW-CHWANG.

THE OLD MANCHU CAPITAL IN THE PATH OF THE JAPANESE.

"THE NEUTRAL ZONE" PEOPLE READY TO RISE AGAINST THE PEKING GOVERNMENT—THE SCENE OF MANY WARS.

The occupation by the Japanese of the city on the banks of the Yaloo River, called Wi-Ju by the Peking bluebooks and Yichow by its own citizens, brings into prominence a district which has had much to do with the making of history. This is the famous land from which the Manchu warriors and their equally warlike ancestors



CEMETERY NEAR TREATY PORT.

marched to subjugate the world. Their conquest of China two centuries and a half ago took away at that time the best part of their population, and since then the nepotism and favoritism of the Peking Government has been drawing large numbers steadily from this district and appointing them to civil and especially military places throughout the Celestial Empire. Three-fourths of the Manchus proper are to be found in the districts other than the one which originally claimed them as its own. To compensate for this loss the Peking Government, which has a curious Cabinet officer whose duty is well expressed by his title, "The Imperial Commissioner for Removing Surplus Population to Insufficiently Settled Lands," has been transferring Chinese from all parts of Northern China, but more especially from Chih-le and Shangtung into the Manchurian districts, which could best provide for immigrants of all classes. More Chinese have been sent into Manchuria than Manchus taken out. As a result of this system of political bookkeeping the land has become Chinese rather than Manchurian, in blood, race and language. The entire population of the territory is estimated at 22,000,000 by European scientists and 24,000,000 by the Chinese Government, of whom 13,000,000 are citizens of the Imperial Province of Shing-king. Politically, Manchuria is divided into three provinces, known as Shing-king, Kirin and Tsi-Tsi-har, these being the south, east and north portions of that territory. Most of this great district is a howling wilderness, the cultivated area being practically confined to the lower part of Kirin and to Shing-king. Little is known of the uncultivated portions mentioned. The Chinese works on the subject refer to them as "mountain countries peopled with wild men and wild beasts," but give no information about them that is of the slightest value geographically or otherwise.

The southern portions, especially Shing-king, have been visited by many Europeans and Americans, particularly since the opening of the city of New-Chwang, on the River Liao, as a treaty port. This was done in 1861, and here there is a small settlement of merchants, steamship agents and missionaries.

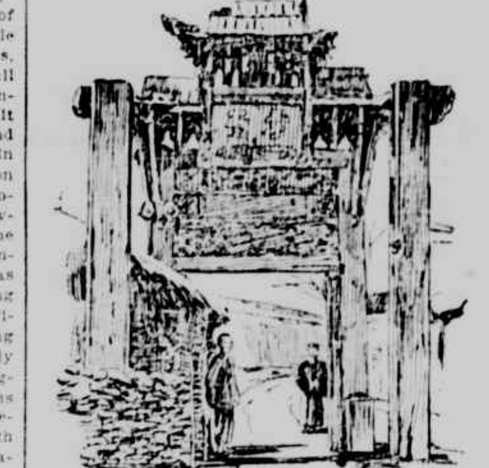
In the present war there is no probability of the Japanese going northward into Kirin and Tsi-Tsi-har. They will enter the province of Shing-king and in all probability march direct upon Moukden, if not upon New-Chwang. These movements will be made with the greatest celerity, inasmuch as the Siberian winter begins in these latitudes about the second week in November, after which it will be difficult for the Japanese to forward troops to the scene of action, and impossible for the Chinese. In case, therefore, of any advance, we may expect a rapid series of battles in the next three weeks between the Yaloo River and the two cities named. From Wi-Ju two routes are open to Moukden. One is directly west to the Chinese city of Fung-Hwang-ting. The distance is a little over twenty miles, and lies across the "Neutral Zone" and "No Man's Land." The country which owns these curious names is a long

A NEW-CHWANG SCENE.

strip lying between the Yaloo River and the Palisade. It is a rich rolling land, very fertile and very salubrious. At one time it had a large population and was very prosperous, but being on the frontier of the two nations it became the Mecca of all the criminals, bandits and pirates from both countries. There was perpetual trouble, riot and bloodshed until a Corean king in the beginning of this century secured the consent of the Peking Cabinet and razed every habitation upon a tract of at least 200 square miles, and put to the sword every man, woman and child that was suspected of belonging to the vicious classes. Since then the land has been kept in about the same condition, excepting that of recent years one or two small villages have been permitted to be erected within sight of the walls of Wi-Ju. The other half of the strip is called the Neutral Zone and is used as a market by both nations. To increase trade the two Governments give special privileges to the merchants who come there to do business and at the markets waive the Lekin and Octroi taxes. The Neutral Zone is delimited on the west by the Palisade. This is one of those giant constructions for which the Chinese are famous. It was originally a great wall of three trunks which started at the city of Taku-shan and ran completely around the entire province of Shing-king until it met the great wall of China thirty miles west of the Gulf of Liao-tung. A branch of it ran far up into the middle of the province of Kirin. Its original intention was to stop the forays which ages ago were the cause of endless trouble to that part of China and Corea. The wood has decayed or been stolen, and but little remains of the original work. Its remnants, however, are distinctly visible, and occasionally rise into walls of stone, brick and mouldering timber, which give a good idea of its original state.

Between the Palisade and the mountains of Liao-tung, six miles to the west, is the continuation of the plain of which the Neutral Zone and No Man's Land are the other parts. To the southeast, about ten miles from the market, which is called the "Corean Gate," is the city of Fung-Hwang-ting. The city has a population of about thirty thousand, is surrounded by fertile farms, and has a large trade in fresh and dried fish with the fishermen of the coast. In times of peace it has a small garrison and a fort of more than mediaeval weakness. It is a rambling inclosure, about half a mile in extent, with walls of sun-dried brick and broken stone, from ten to fifteen feet high. Large portions of it fall down whenever they have a heavy rain. At present there must be at least 5,000 troops there, with a large number en route from different parts of the Province.

The other route from Wi-Ju lies due north through the Neutral Zone to the city of Hing-King, which is about eighty-five miles away. Hing-King is famous in China for having been the home of the Manchu Kings in the early centuries. It is situated in a beautiful valley, among the Chang-Peh-Shan Mountains, on the banks of a very picturesque mountain torrent. The valley is of great fertility, and being protected from the cold winds by the mountains round about, enjoys a delightfully equable climate. It is some twenty miles long and five miles wide. The city itself is built on rising ground, and is surrounded by a well-constructed stone wall. Two miles and one-half to the north is the mountain of the Tsing tombs. The mountain itself is called the Tsze-Yun-Shan. It is a small city, being but three miles in circumference, and has a population of not more than five thousand, of whom nearly all the adults are soldiers, or else artisans belonging to the various industries connected with tomb-building. The tombs themselves are numerous but varying in character. The old ones are small and ugly, while the more recent ones are models of Chinese art. They are guarded day and night by soldiers from the garrison, and unlike most tombs in China, are kept in excellent repair. There are some hot springs in the neighborhood, and some mineral springs, said to be of considerable medicinal value. On account of the tombs the roads about Hing-King are unusually good. They are kept in splendid order, so that when members of the Royal family



MEMORIAL ARCH NEAR MOUKDEN.

come to worship their ancestors they shall experience no difficulty or discomfort in travelling.

In the city are a number of palaces, if such a term can be applied to the great rambling, one-storied structures, in which Eastern royalty delights to dwell, and at the mountain of the tombs are a number of pretty temples and shelter-houses for those who desire to remain over-night or wish protection from inclement weather. There are priests, both Buddhist and Taoist, and on a little stream to the south of the mausoleums are a number of water-prayer mills, which revolve merrily day and night until the springs are frozen. Each turn of the wheel is considered the equivalent of one prayer, and as they revolve ten or fifteen times a minute the amount of accumulated piety they have laid up for the repose of the souls of the dead Manchu monarchs must be far up in the billions.

Sixty miles west of Hing-King is the Manchurian metropolis, known variously by the Manchu name of Moukden, the Chinese of Fung-tien, or classic Chinese of Shing-Yang. It is also known officially as Shing-king-pun-ching. It lies on the banks of the Shin-kiang, an affluent of the Liao-kiang.

Moukden is the residence city of the Viceroy of the Manchurian provinces. He lives here in great state, with a powerful retinue and a small army, which in the blue books is set down at 10,000 men. The city is double, like that of Peking, and both the inner and outer ones are surrounded by walls. That of the outer city is made of mud, sun-dried bricks and tiles, and is some twelve miles in circumference, the inclosed area being an irregular oval of about ten square miles. The inner city is more than half as large as the outer city, and is surrounded by one of the best city walls in China. It is forty feet high, fifteen feet wide at the top and twenty at the bottom, made of hard-burned brick and faced and trimmed with cut stone. At every 200 feet is a tower or bastion, and at each of the eight great gates is an outside wall with towers to resist sudden attacks or surprises. The streets are Manchurian and not Chinese, being wide, clean and comparatively well paved. Their arrangement is quite ingenious. The city is divided by wide avenues, which run through in a straight line from each gate to the opposite one. There are also diagonal avenues, which form an inscribed octagonal, though of considerable irregularity. Connecting the avenues are lines of streets and roads of smaller size. At the centre of the great avenues is, very appropriately, the palace of the ancient Manchu kings. It is surrounded by strong walls and guarded by fierce warriors from Tsi-Tsi-har. It is said to have been visited by only one "foreign devil," a British Consul. Around the palace are the yamens or inclosed establishments of the Viceroy, the Fan-tai or Provincial Treasurer; the Ti-tai or Admiral, the Tao-tai or Prefect, the Inspector-General, Major-General, brigadier-generals and colonels, and beyond these the residences of merchants, courtiers, officials and the wealthy classes. In the outer city are all or nearly all of the stores and warehouses. These are large, very neat and attractive. The population within the walls is estimated at 200,000, while that in the suburbs about the city is as much more. It was made a provincial capital 264 years ago, at the time when the Manchus had conquered Northern China. They apparently intended in those days to make their own city the capital of the Empire instead of Peking, because it was laid out by the engineers who afterward were employed upon the latter city, and was built with utter disregard of time, labor and expense. Although Peking became the capital the Tartar sovereigns did not forget the other city. They visited it from year to year, and spent enormous sums in beautifying it and improving the suburbs. Around about the settlement are fine roads, handsome parks and any number of pretty little mountain resorts which are

A HING-KING FAMILY.

used in the hot days of summer. The place does an immense trade, and has more wealth in all probabilities than any other city in North China east of Peking. From it caravans come and go to and from Manchuria, Siberia, Tse-Tsen, Northern Chih-li and Corea.

It is the great fur-market of the Empire, and besides doing a vast business in breadstuffs and all other forms of food, it is the receiving place for the taxes of the three provinces, which are usually paid in produce, furs, live stock and precious metals, and not in coin. In fact, with the exception of the familiar cash which is in use throughout the Far East, there is practically no currency in that part of the Empire. Values are in weights of silver and bills, are paid in sycee or silver fragments and not in coined bullion. There are gold and silver mines somewhere in this district, but they are zealously guarded from the outside world. All that is known is that there is a steady stream of at least a million dollars worth a year of crude gold and silver flowing into the Provincial Treasury at Moukden. Moukden has been celebrated in verse by no less a poet than the Emperor Kuenlung. A good translation of this metrical gem was made into French by the scholar Amyot. Next to the capture of Peking, the capture of Moukden will be the greatest blow that the Japanese can strike at the proud occupants of the Heavenly Throne. Its capture means the loss of prestige, and the crushing of the Tartar pride.

From Moukden a fair road runs to Peking, which is about 500 miles to the southwest. It has been traversed so often by the Manchurian and Mongolian horsemen that it is in better condition for an army than almost any other road in the North. Another road south by west goes to the treaty port of Newchwang about fifty-five miles away. There is no doubt in the mind of any one familiar with China but that the Japanese either before or after the capture of Moukden will make a descent upon this place. It does the largest export business of all the Northern treaty ports, as it supplies the rest of the coast with beans and other agricultural products. As long as the harbor is open, which is about eight months of the year, its miserable harbor is crowded with freight steamers, junks and sailing vessels. In 1892 there entered and cleared 754 steamers, 102 sailing vessels and 3,800 junks. All of these went away laden down with local produce. Capturing Newchwang would stop this enormous traffic and convey the impression of Chinese disaster and ruin to every part of the coast.

There is another feature about this contemplated move of the Japanese which seems to have escaped all notice heretofore, and that is the unstable and unruly condition of the Manchurian population. They have been growing restive under the Imperial yoke from year to year, and since 1889 have engaged in any number of raids, riots and uprisings. They have worried Li Hung Chang beyond all expression in the last decade and have necessitated the keeping of strong garrisons at Moukden, Kwang-Ying, Ichau, Kin-chow, Kieng-Chang, Chao-Yan and Ching-tih. In November, 1891, they rose 8,000 strong, and under, it is said, the command of a distinguished Lama priest attacked the garrison at Chao-yan, killing the major-general and 700 soldiers and driving the rest of the army, some 3,500 in number, into the hills beyond the city. Li Hung Chang was compelled to send 6,000 troops from Tien-Tsin and other points to suppress the rebellion. He did so in true Oriental style. Two months afterward his General reported that he had met the insurgents and after a fierce battle had defeated them with great slaughter, his own losses being about fifty and that of the rebels 4,000. This, of course, meant that the rebels dispersed when they heard of the heavy force sent against them and that the General simply took so many men from each town and city involved in the uprising and beheaded them in cold blood.

After that, however, the garrison at Chao-Yan was doubled and has been kept at the latter figure ever since. In October, 1892, and in November, 1893, there were similar, but smaller uprisings between Kin-chow and Moukden. They killed large numbers of troops and were in turn slaughtered by thousands by the Imperialists. These people are rebellious enough to join forces with the Japanese partly in the hope of vengeance, but chiefly in the idea of destroying the administration which keeps them in a condition bordering upon starvation. At the furthest they will be a help and not a hindrance to the invader.

RIVAL ROUTES FOR MEXICAN TRADE.

San Francisco, Sept. 23.—"The Chronicle" yesterday said: "The rivals of the Pacific Mail Company for the Mexican trade on the Pacific Coast have become the rivals of C. P. Huntington on the Atlantic side. Two concessions were granted to Don Eliso Canton Julio from the Mexican Government, one from Salina Cruz to San Francisco, and the other from the terminus of the Tehuantepec Railroad on the Gulf of Mexico to New-Orleans. Consul-General Geney, of Mexico, says that this latter concession has been granted, and he is of the impression that both franchises were issued to the same company. The terminus of the new line of steamers on the Atlantic will be Progreso, in Yucatan. Huntington's line runs from New-Orleans to Vera Cruz, on the Gulf of Mexico."

COURT CALENDARS FOR TO-DAY.

Supreme Court—Chambers—Before Lawrence, J.—Court opens at 10:30 a. m. Motions. Calendar called at 11 a. m. Class I—Poulson vs. Manufacturers' Special Machine Company, Hagan vs. Meyer, Hamilton Bank of New-York vs. Kendall. Class III—Chedsey vs. Leavenworth. Class IV—Condert vs. De Logerot, same vs. Hacker. Class VI—Quinlan vs. Montgomery, James vs. Ellis. Class VII—Simon vs. Sampter, Wahrman vs. North Hudson L. Co., Murray vs. Andrews. Class VIII—Harler vs. Manhattan Railroad Company, Gottlieb vs. same, Connell vs. Connell, Murphy vs. Baur, Department of Buildings, etc., vs. Dougherty, Grose vs. Shane, Federgreen vs. Blanner, Railway E. and Publishing Company vs. State Park Bank of New-York, Strouse vs. Meyer, Wynne vs. Frolan, Hearn vs. O'Leary, same vs. same, same vs. Franklin Savings Bank, matter of Hossack, Raymond vs. Car, Halpin vs. D'Blasio, Mitchell vs. Frost, Milliken vs. Dayton, Casola vs. Kingelmann, people, etc., vs. American Home Investment Company of New-York, Strugnell vs. Conklin, Cruikshank vs. Goodwin, Wischanski vs. Sullivan, Beals vs. Barrez, Griffin vs. Corbally, Ebert vs. Schippel, Gunther vs. Gunther, Barth vs. Manning, matter of Lexington-ave., Berry vs. Mehrbach, matter of Miller.

Supreme Court—General Term—Recess.

Supreme Court—Special Term—Parts I, II and III—Adjourned for the term.

Circuit Court—Parts I, II, III and IV—Adjourned for the term.

Superior Court—Special Term—Before McAdam, J.—Court opens at 10 a. m. Motions. Calendar called at 11 a. m. No. 1045, Bloom vs. Bloom. No. 1054, Niedhammer vs. Niedhammer.

Superior Court—General Term—Adjourned for the term.

Superior Court—Equity Term—Adjourned for the term.

Superior Court—Trial Term—Parts I, II and III—Adjourned for the term.

Surrogate's Court—Chambers—Before Fitzgerald, S.—Court opens at 10:30 a. m. No day calendar. Wills for probate, Frederick Kaube, Sarah Forman, Richard Zobelt, Lewis R. Blair, at 10:30 a. m.; George W. Decker, Elizabeth M. Becherer, Eliza A. Harris, Mary L. Welch, Jacob F. Bamberger, at 2 p. m.

Surrogate's Court—Trial Term—Before Arnold, S.—No. 977, will of Mary E. McLarney; No. 983, will of Daniel Mahen, No. 990, will of Simon B. Marks; No. 991, will of John J. Irvin, at 10:30 a. m.

Common Pleas—General Term—Adjourned sine die.

Common Pleas—Special Term—Before Pryor, J.—Court opens at 11 a. m. Motions.

Common Pleas—Equity Term—Adjourned sine die.

Common Pleas—Trial Term—Parts I, II and III—Adjourned for the term.

City Court—Special Term—Before McCarthy, J.—Court opens at 10 a. m. Motions.

City Court—General Term—Before Ehrlich, C. J., Fitzsimons and Newburger, JJ.—Court opens at 10 a. m. Appeals from orders: Nos. 1 to 11, inclusive. Appeals from judgments: Nos. 1 to 32, inclusive.

City Court—Trial Term—Parts I, II, III and IV—Adjourned for the term.

REFEREES APPOINTED.

Supreme Court.

By Lawrence, J.

Klaber vs. the Automaton Piano Co.—Jesse K. Furlong.
Strong vs. Wright—Charles W. West.
Warden vs. Wright—Charles W. West.
Matter of Boscobel (in re Traynor)—Frank A. Acer.
National Academy of Design vs. Lyon et al—Lawrence Godkin.
Gaudy vs. Egan—Martin McMahon.

Common Pleas.

By Pryor, J.

Held vs. Lynch—Wilbur Larremore.
Matter of Puls & Co.—Samuel B. Paul.
United States Fire Insurance Co. of New York City vs. Dore Lyon (two cases)—Donald McLean.
Matter of Roberts & Co.—William S. Keilly.

Superior Court.

By McAdam, J.

Oster vs. United States Illuminating Co.—Charles L. Guy.
Rowan vs. Rowan et al—Edwin F. Stern.
Rapp vs. Rapp et al—Edward F. Stern.

Supreme Court.

Clark vs. Denver City Cable Railway—Hamilton Odell.
People, etc., vs. Home Benefit Association—William G. Davies.
Emmet vs. Emmet—Gilbert M. Spier.

RECEIVERS APPOINTED.

Supreme Court.

By Lawrence, J.

Emile Klaber vs. the Automaton Piano Co.—Abram B. de Frece.

Common Pleas.

By Pryor, J.

Charles H. Nicoll vs. John M. Reiner—Avery D. Andrews.

By Daly, C. J.

William F. Fluhrer vs. Edward C. Man—Gustav F. Donnell.

Through train service of the New-York Central to and from Adirondack Mountains will continue until October 1. Hotels in the mountains are all open.

SCIENCE AND MECHANICS.

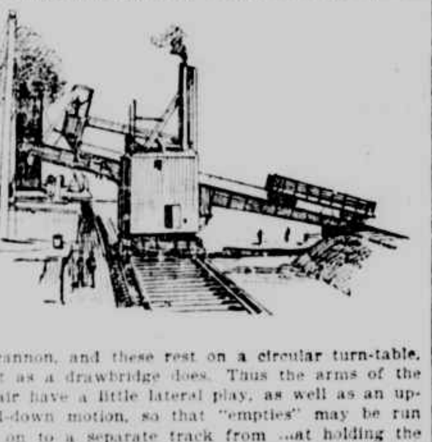
(From The Weekly Tribune.)

FOR COALING LAKE STEAMERS.

A SCHEME WHICH SECURES SPEED WITHOUT DAMAGING THE CARGO.

There is an enormous trade in soft coal between Lake Erie ports and the extreme Northwest, and for twenty years efforts have been made to invent a method of transferring this class of freight from railway-car to steamship without breaking of the pieces in handling, and thus materially lessening its value. The almost universal practice in effecting the transshipment of such merchandise is to have men shovel it into great iron buckets, each holding a quarter or half a ton, hoist the same with a derrick, swing it over and lower it into a hatchway, and there dump it. Buckets have been made and operated that will hold five tons; but even with these, large vessels are often delayed from two to four days in getting the cargo aboard. What is wanted is a plan which is more expeditious, and yet will not injure the coal itself seriously. And this seems to have been attained in the McMyler machine.

This invention consists essentially of a tilting bridge, one end of which is lowered to enable a loaded car to be hauled up its incline. The structure now teeters in the other direction; and, after moving a short distance, the coal is discharged down a shute into the hatchway. Finally the empty car is run off, and another one is hauled up. The bridge has trunnions or horizontal pivots, like



a cannon, and these rest on a circular turn-table, just as a drawbridge does. Thus the arms of the affair have a little lateral play, as well as an up-and-down motion, so that "empties" may be run off on to a separate track from that holding the full cars. Moreover, the foundation is mounted on car wheels, and can be shifted along the wharf from one hatchway to another. To make the system available it is necessary to have a dozen or more tracks for coal cars at right angles with the vessel's side. In describing this machine, "The Iron Age" says that several records as high as fifteen cars of twenty-three tons each in one hour have been made with it, and that steamers with a capacity of from 2,000 to 3,100 tons have been loaded in between eight and twelve hours. Cars carrying fifty tons may also be handled in the same manner. So ingeniously arranged is the shute, it is said, the coal is discharged in a compact mass, so that scarcely any crumbling results. Only four men are required to operate this machine. One manages the engine which works the hydraulic apparatus, another is a fireman, a third hooks the steel hauling-cable into the draw-head of the car, and a fourth performs the other duties on the bridge.

MORE INTENSE COLD THAN EVER.

PROFESSOR DEWAR LIQUEFIES HYDROGEN GAS AND SURPASSES HIS FORMER ACHIEVEMENTS.

Professor James Dewar, who surprised the scientific world about two years ago by reducing oxygen and nitrogen (long believed to be permanent gases) to a liquid form by means of intense cold, and who last winter succeeded in freezing air, has within a few weeks announced another remarkable performance. Although he speaks of it with caution—and, of course, nobody else is likely to claim more for it than he—he evidently believes that he has converted hydrogen gas, the lightest substance known, into a liquid, and produced a temperature of 240 degrees below zero, Centigrade.

The theoretical basis of all these experiments is the fact that a volatile substance, when evaporating, will produce on the surface of the vessel containing it a temperature which is lower than that of the surrounding air. This effect may be heightened if the fluid first be put under enormous pressure by mechanical means, and also by having the evaporation occur in a receiver from which as much air as possible has been exhausted. Thus, with liquid nitrous oxide, liberated under those conditions between the outer and inner walls of a double receptacle, Dewar got —99 C., and reduced to that temperature a more volatile fluid, ethylene, contained in the inner chamber. The ethylene had also been put under pressure before being set free, and gave —145 on evaporation. Compressed oxygen, brought to that temperature by the ethylene, produced —210 when liberated.

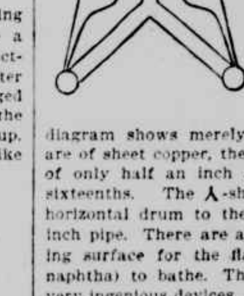
There, for a time, Dewar thought he was effectually balked. It is not necessary, in order to change a substance from the gaseous to the liquid state, to reduce its temperature to what is known as its boiling point. If it be subjected to great pressure, it will liquefy at a higher degree. It must, however, be reduced below what is called its "critical point." Thus, liquid oxygen boils at —184 C. But its "critical point" is —115 C. Natterer subjected this gas to a pressure of thirty tons to the square inch; but as he used a temperature above —115, his efforts failed. Dewar, on the other hand, not only employed enormous pressure, but cooled his oxygen below its critical point. Hence he was able to convert it into a liquid at —145. Now the critical point of hydrogen is —210. The utmost skill of the great experimenter would enable him barely to reach that stage, but not go a single degree further. His victory was finally achieved by making a new substance, a mixture of air and hydrogen, whose critical point was about —200. The old tactics thus became practicable. His product was sometimes a sort of paste or jelly, and sometimes a white solid with a clear liquid so volatile that he could not capture it. Both theoretical reasons and thermo-electric apparatus enable him to say that it had a temperature of about 240 below zero C. He does not feel disposed positively to pronounce the liquid to be hydrogen, pure and simple; but he is unable to say what else it is, and evidently believes it to be that gas in a new form.

The difficulty which he has in collecting the fluid, owing to its volatility, is not his only embarrassment just at present. These experiments are very costly, and it is intimated that he needs pecuniary help in prosecuting them further. Of the liquid air which he is able to produce two-thirds evaporates in the handling. But of the liquid hydrogen he gets only from 1 to 5 per cent. In other words, it is about twenty times as expensive.

THAT WONDERFUL STEAM ENGINE.

HOW MAXIM GENERATES POWER FOR HIS FLYING-MACHINE.

Much interest is manifested both in Europe and America in the engine and boiler which Mr. Maxim made for his flying-machine. Skilful builders have made five and ten horse-power motors for steam launches that would give one horse-power for eight or ten pounds of weight, and is so doing thought they had achieved a wonderful success. Their suppositions were correct, too. People read with amazement, therefore, of Mr. Maxim's actually getting 363 horse-power, and expecting even yet to derive 500, from apparatus weighing but very little over 1,800 pounds, thus reducing the ratio to one to four or five.



A large part of this triumph of engineering skill is due to the construction of the boiler. It is of the water-tube type, and a cross between the Darrow and Thornecroft patterns, used in the latest British torpedo-boats. Our diagram shows merely a cross-section. The tubes are of sheet copper, the inside set having a diameter of only half an inch and the outside ones three-sixteenths. The λ-shaped down-take from the horizontal drum to the water-bottoms is of three-inch pipe. There are about 800 square feet of heating surface for the flame (produced by vaporized naphtha) to bathe. There are several original and very ingenious devices, such as gauges and injectors, connected with the boiler. Furnace, casing, feed-water heater, boiler and water (of which last there is 200 pounds) weigh 1,200 pounds. A pressure of 330 pounds is used.

From the boiler there are two pipes, one supplying steam to each of the engines; and the latter are used to drive separate propeller shafts. The high pressure cylinder of each engine has a piston of 5.5 inches diameter; the low-pressure pistons, 8 inches, and a stroke of a foot. The high-pressure cut-off is 0.75 of a stroke; low-pressure, 0.625. The high-pressure cylinder has a large clearance. The ports and steam passages are unusually large. Piston valves are used with three inches travel. About 750 revolutions a minute is the maximum speed attained.

A NEW MEASURE FOR ELECTRICITY.

DR. CREHORE'S METHOD OF GETTING A RECORD WITH POLARIZED LIGHT.

Most of the instruments in actual use for measuring the exact amount of electric current flowing in a conductor give indications at any instant when a certain connection is made, which may be done every few minutes. This method yields fairly satisfactory results, but is not as precise as it might be and does not afford a continuous record. All of the inventions for securing the latter object, until very recently, have required that some small object having weight, like a mirror or diaphragm, shall be moved. Such a plan, for an alternating current especially, has its advantages. But at the last general meeting of the American Institute of Electrical Engineers Dr. Albert H. Crehore proposed a method which is free from the latter objection, and, while not developed completely, looks as if it might possess practical value.

The underlying principle of this plan is an old one; the application is new. When a beam of light has been "polarized" by passing through a Nicol prism, it will readily go through another such prism, provided that the latter is held in a prescribed position. To secure the utmost brilliancy it is necessary that a certain plane in the second crystal (the analyzer) be exactly parallel with the corresponding plane in the first one (the polarizer); but if the analyzer be turned on its axis a quarter way around in either direction the ray will be extinguished. Faraday discovered, however, that if the medium through which the light passed after polarization be magnetized in a certain particular manner the beam would be affected just as if the analyzer had been rotated. Thus, if the two instruments were placed a short distance apart, and the analyzer were set so that the polarized ray would come through and appear on a screen with the highest intensity which it was capable of exhibiting, magnetization of the transparent medium between the pair would diminish the brightness of the light. If the analyzer were turned so as to obliterate the beam, magnetism would render it more or less visible. Dr. Crehore took for his experiment a glass tube twenty-seven inches long and filled with bi-sulphide of carbon, a fluid not only exceedingly clear, but also possessing some other desirable properties. The tube had a Nicol prism at each end, and was wound for about two feet of its length with six layers of insulated copper wire. When the current was sent through this coil, the bi-sulphide was magnetized, and the lines of magnetization were (as Faraday required) parallel with the direction of the beam to be experimented with.

Now, if white light be sent through such apparatus before the current is turned on, that which would appear on the screen, and which would fade and brighten as the second prism is rotated, would also be white. But when electricity is sent through the coil, its rotational influence is different for each of the constituent colors. Hence, if the light be projected through a small slit, a rainbow may then be produced; and a dark streak across it, representing the total extinction of some one color or shade of color, may be produced by setting the analyzer at just such a point. For convenience, this band was developed about midway between the extreme red and violet. Alternations of the current then caused the dark streak to oscillate regularly from one end of the spectrum to the other. Its position always corresponded to a particular force, and the displacement has been found to be approximately proportional to the current.

The vibrating signal has not as sharp edges, Dr. Crehore says, as might be desired, and photographic plates which would register its fluctuations would need to be very sensitive. Besides, the method is better adapted to showing the direction of any variations in the current than the amount of the current. But he has gotten rid of the element of weight, and provides for a continuous register, and when certain details are perfected, the plan may prove highly serviceable.

AN EPISODE IN SUGAR.

From The Detroit Free Press.

They were the children of statesmen and loved each other. They had plighted their troth and she had promised to be his.

"Darling," he murmured as he held her in his arms and looked lovingly down into her face, "you are so sweet that when I think of you being mine it makes me feel as if I belonged to the sugar trust."

"Oh, George," was all the reply she could make in that moment of exquisite ecstasy.

"Only," he went on rapturously, "you are sweeter than sugar."

A shade of doubt swept like a faint and far-off nebulous cloud across her fair, young face.

"Above or below No. 16, Dutch standard?" she asked in tremulous hesitancy, and the answer he gave her sounded like a chemical analysis, with a smack to it.